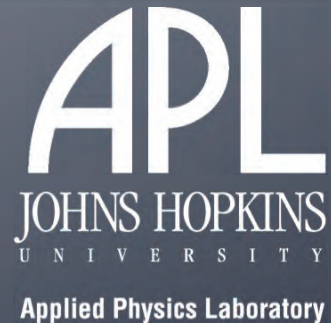


ESSENCE: Desktop Edition

A Self-Contained Disease Surveillance Application

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EDE – Background



- EDE is based on Enterprise ESSENCE
- Enterprise ESSENCE is the Electronic Surveillance System for the Early Notification of Community-based Epidemics
 - Web-based tool
 - Collects and analyzes health data
 - Uses anomaly detection algorithms
 - Flags unusually high disease indicator counts
 - Designed for areas with pre-collected health data
 - Users view, segment, and map results
- Enterprise ESSENCE is best suited to areas with stable internet

EDE – Why



- Electronic biosurveillance
 - Useful during crisis situations
 - Resource-limited areas
 - Need for a complete surveillance solution
- ESSENCE Desktop Edition
 - Remove the need for internet connectivity
 - Reduce the need of large systems
 - Provide a well featured tool set for biosurveillance
 - Provide the basic functionality and analytics of Enterprise ESSENCE

EDE – Objective

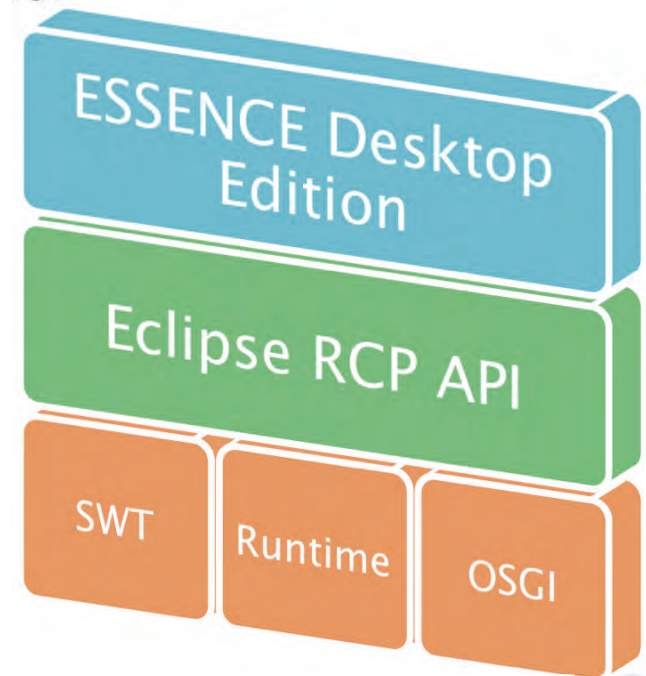


- Create a disease surveillance tool that:
 - Runs on a stand-alone computer
 - Operates as a self-contained application
 - Deploys easily/efficiently
 - Functions in diverse settings
 - Supports open development and extensibility

EDE – Methods



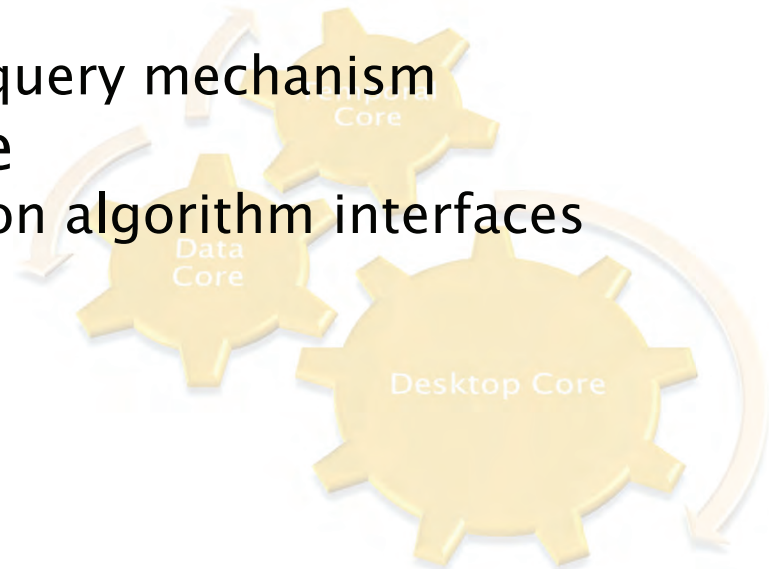
- EDE uses the Eclipse Rich Client Platform (RCP)
 - Customizable application framework
 - Built with software units called “plugins.”
- RCP
 - Well supported
 - Continued application growth
 - Scalable framework
 - Provides a wide set of features
- Plugins allow developers
 - To add functionality
 - Upgrade features
 - Deploy bug fixes



EDE – Implementation



- EDE consists of the following plugins:
 - Desktop Core
 - Provides the main user interfaces
 - Desktop Data Core
 - Provides underlying data query mechanism
 - Detector Temporal Core
 - Provides temporal detection algorithm interfaces
- Releases of EDE
 - Bug fixes
 - Additional features
 - Customizations



EDE – Where



- Department of Health of the Republic of the Philippines (RP)
 - Add-in module to the EpiInfo™ based national disease surveillance system
- Cebu City, RP Health Office
 - A free-standing application



EDE – How



- National Epidemiology Center
 - Monitor trends for officially notifiable diseases
- Centers utilize EDE's compatibility features
 - EpiInfo™ data entry
 - EpiInfo's™ EpiMap



EDE – Results



- EDE supports user needs “out of the box”:
 - Configuration to data
 - User queries
 - User-created, performed and savable queries
 - Results visualization
 - Graphs, charts, and detailed data
 - Results export
 - Detection results and count data export to EpiInfo™
EpiMap

EDE – Creating a Datasource



- Create a Datasource to use for future queries
- Wizard configures the Datasource to meet your database schema
- Supports multiple databases
 - Microsoft Access Databases
 - Derby Databases
 - Microsoft SQL Server Databases
 - Delimited text files

A screenshot of a Windows-style dialog box titled 'Creating new Data Source'. It contains a 'Select Data Source Type' section with a subtitle 'This wizard allows the set-up of a Data Source'. Below this are several input fields: 'Name' (HealthDatabase), 'Database Type' (Access), 'Location' (C:\Documents and Settings\HodanCJ1\ with a 'Browse...' button), 'User Name' (admin), and 'Password' (masked with dots). There is a 'Test Connection' button. At the bottom, there are 'Choose a table' (Contacts) and 'Detection Count Style' (Row Per Count Strategy) dropdowns. Navigation buttons at the bottom include '< Back', 'Next >', 'Finish', and 'Cancel'.

EDE – Creating a Query



- Create a query from a Datasource
- Graphically build a query with a capable dynamic interface
- Save query and configurations

*Philippines Data

Column: date

☒ After: 7/31/2006

☒ Before: 07/31/2008

And

Column: barangay

Select Locations: BUS-BUS, BUSAI, BUSAN, BUSANA, BUSAON, RI ISAY

And

Column: age

Select Values: 31, 32, 33, 34, 35, 36

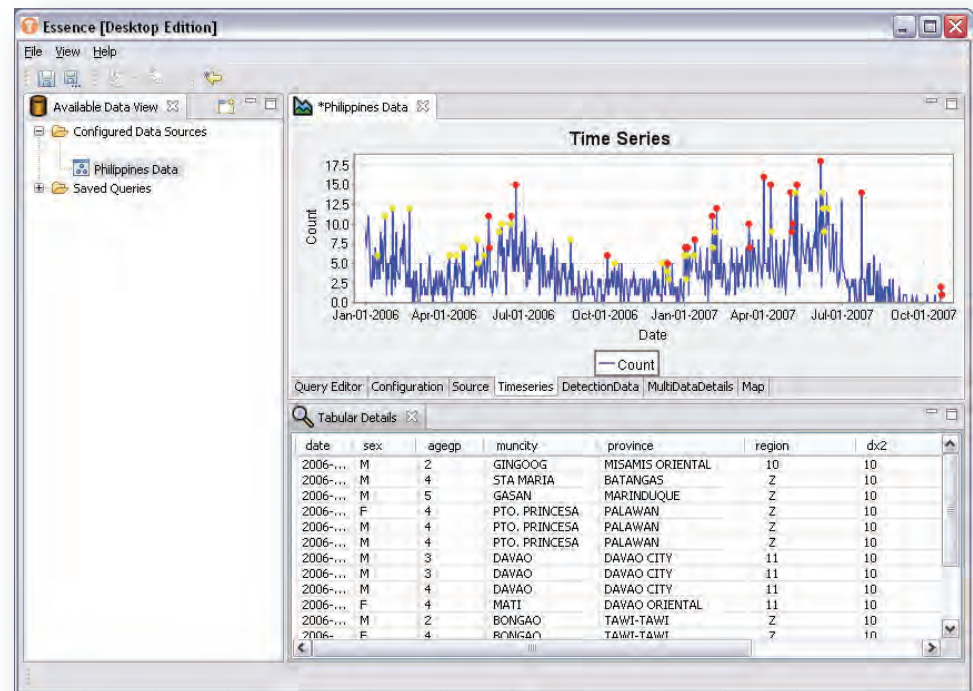
Run Query

Query Editor | Configuration | Source | Timeseries | DetectionData | MultiDataDetails | Map

EDE – Executing a Query



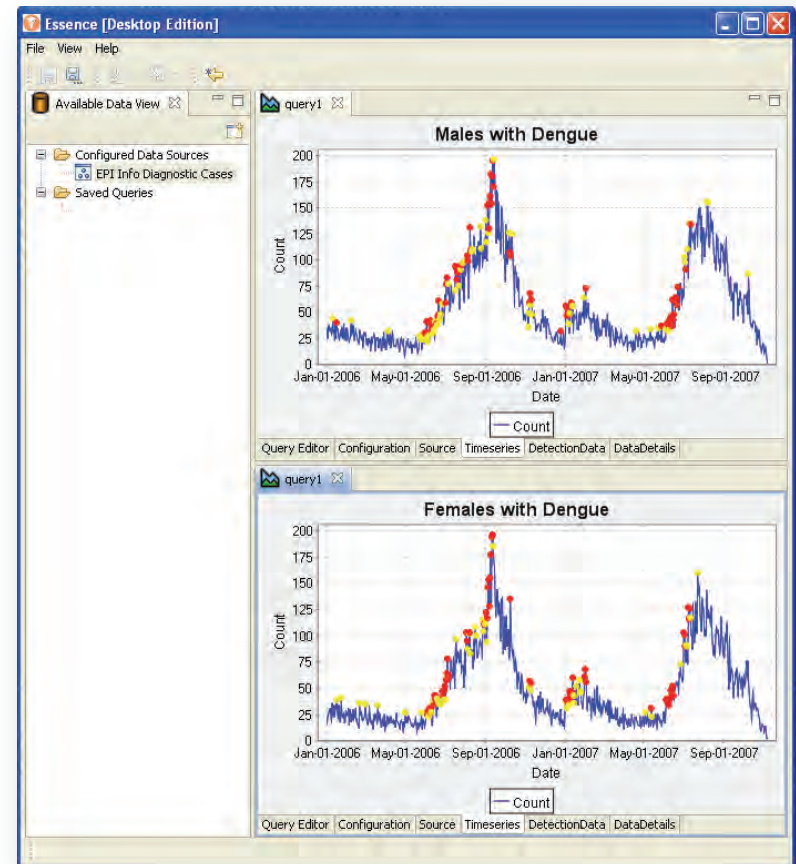
- Execute a query to return results
 - Timeseries Graph
 - Detection Data
 - Detailed Data
 - Data Slices
 - Geographical Data



EDE – Compare Results



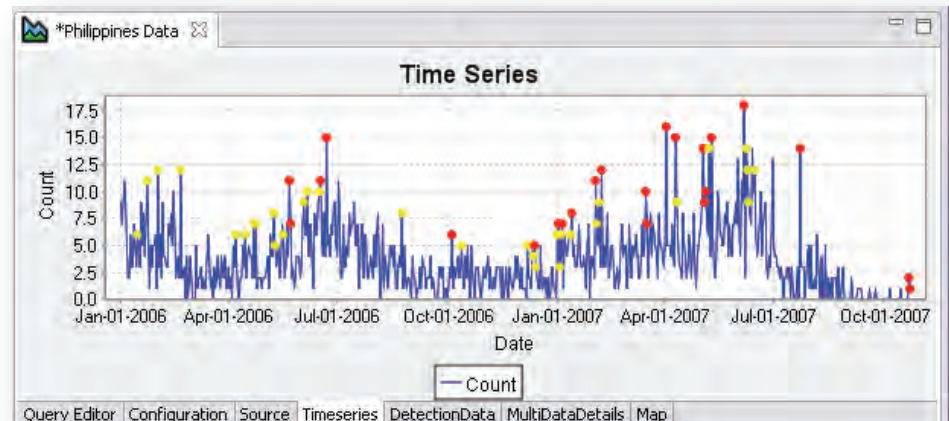
- Execute multiple queries simultaneously
- Compare results
- Zoom on specific areas
- Create custom images



EDE – Detection



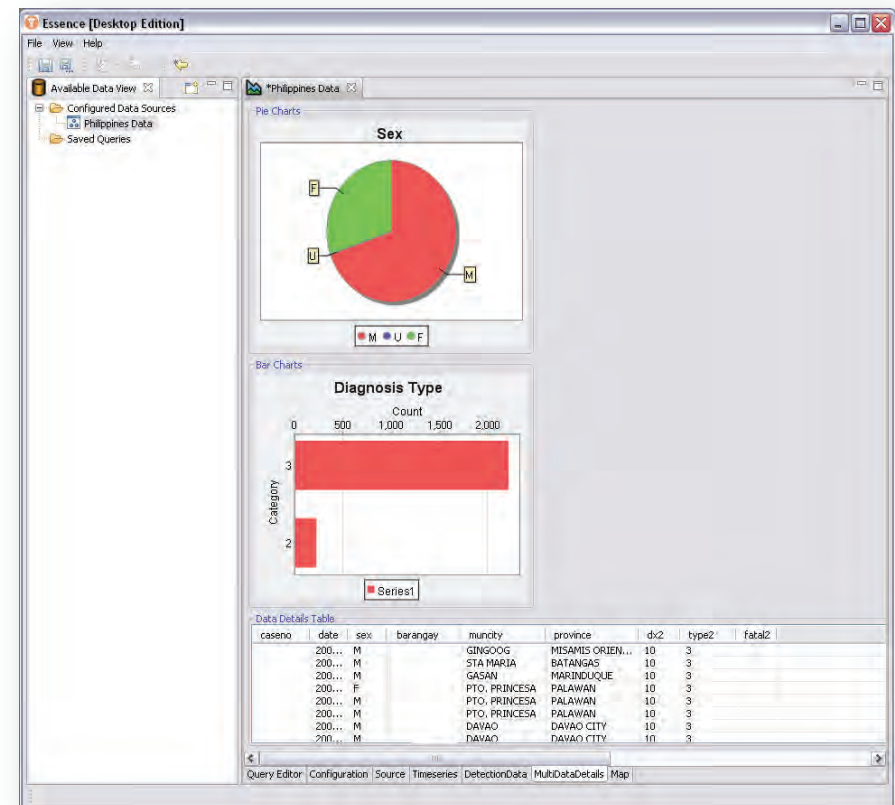
- Detection algorithms supported
 - EWMA
 - Gstat
 - Linear Regression
 - Poisson
 - Ears CDC 1, 2, 3
- Developers can add other algorithms



EDE – Details View



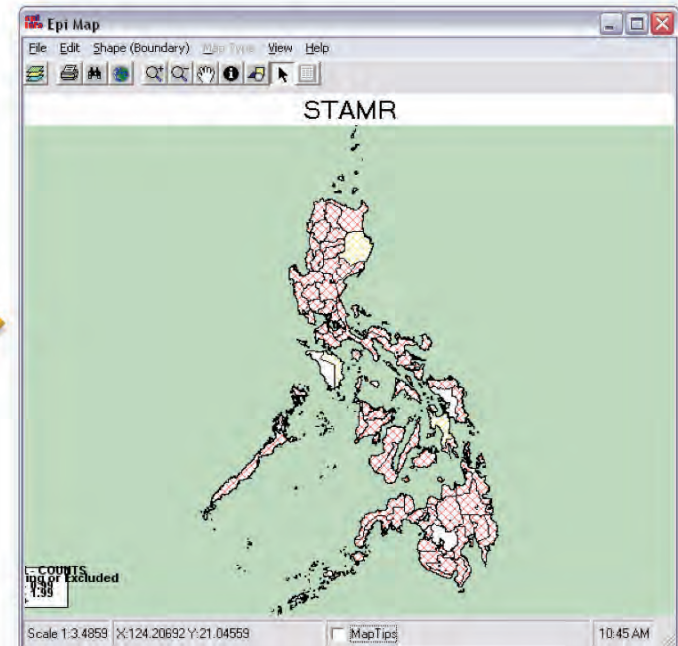
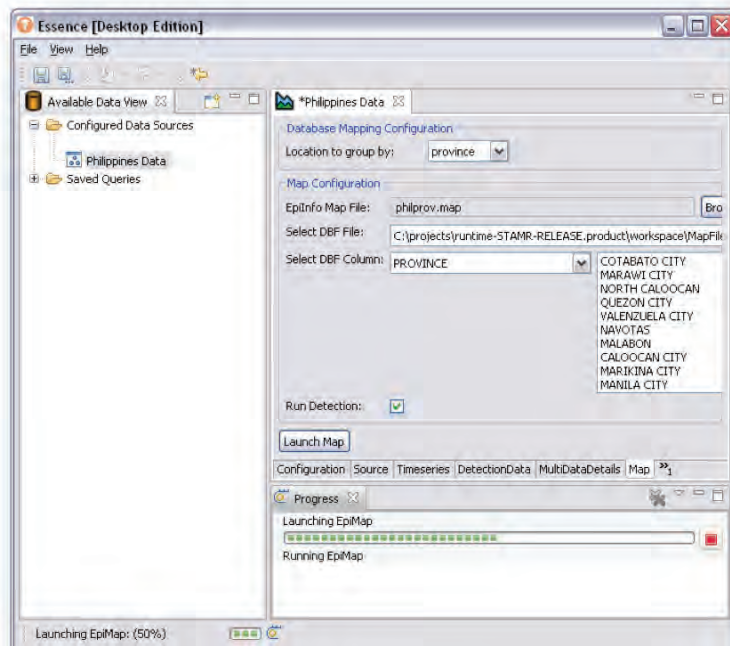
- Select specific slices of data
- Drill down from the original query
- Create exportable pie charts and bar graphs



EDE – Map Configuration



- EDE exports query results for locations
- Launches EpiInfo's™ EpiMap for display



EDE – Conclusion



- EDE
 - Easily deployable, Upgradeable, Extendable
 - Self-contained desktop application
 - Similar functionality to Enterprise ESSENCE
- Users
 - Customizable desktop solution
 - Configurable to user data
 - Well supported framework
 - Robust core set of features
- Future
 - Internal GIS mapping, Integrated Help, Internal Updates

EDE – Team



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- Charles Hodanics
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■ NEC

- Marlow Niñal

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